

# MAGNECRAFT ELECTRIC COMPANY

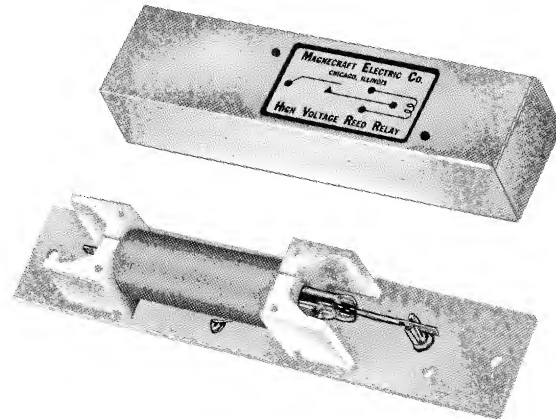
## Product Data Bulletin, Number 666

### "102V" HIGH VOLTAGE REED RELAY SWITCHES 5000V!

The new Magnecraft Class "102V" High Voltage Reed Relay permits switching voltages as high as 5000 volts at 50 volt-amperes maximum with the inherent reliability of reed relay operation.

Contacts are made from special materials to assure long, trouble-free operation. Reed switch leads are not bent and used as terminals but are soldered to rigid terminal supports . . . external stresses cannot be transmitted to the switch members. The molded Nylon coil bobbin and epoxy resin terminal boards provide maximum dielectric constants for continued high voltage insulation.

The unusually compact relay package features an internally insulated metal cover that provides both electromagnetic and electrostatic shielding; external magnetic fields cannot affect the relay . . . possible RF generation from contact arcing cannot affect surrounding circuitry.



Magnecraft's Class 102V High Voltage Reed Relay switches up to 5000 volts at 50 Volt-Amperes!

#### SPECIFICATIONS

**Contacts:** SPST-NO (Form A)  
**DC Coil Power Required:** 500 Milliwatts nominal, 2 Watts maximum for continuous duty  
**Operate Time:** 2 Milliseconds, average  
**Release Time:** 1 Millisecond, average  
**Contact Bounce:** 500 Microseconds, average  
**Contact Load Rating:** 50 Volt-Amperes maximum at 3 Amperes maximum or 5000 Volts maximum  
**Capacitance Across Contacts:** 1 Picofarad, average  
**Life Expectancy, Rated Load:** 20 million cycles  
**Insulation to Ground:** Contacts, 5000 Volts AC RMS; Coil, 750 Volts AC RMS  
**Operating Position:** Any  
**Ambient Temperature Range:** -50°F. (-45°C.) to +185°F. (+85°C.)

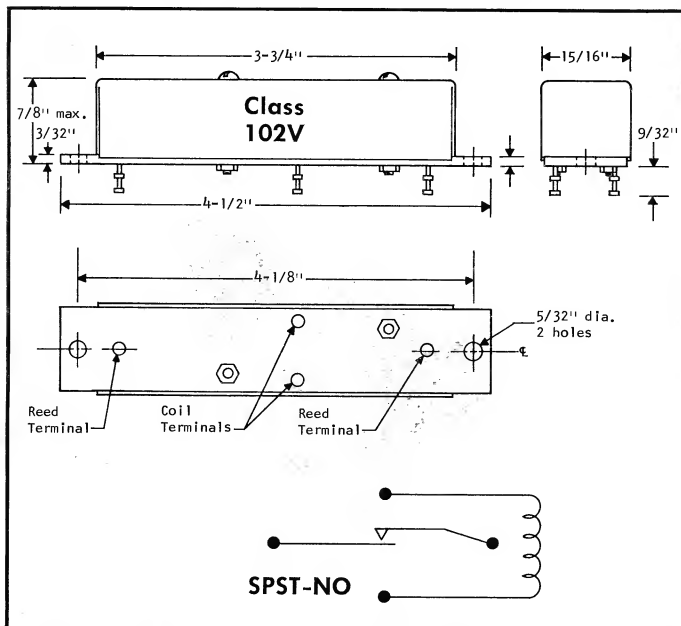
#### IN STOCK FOR IMMEDIATE DELIVERY

| CATALOG NUMBER | DC COIL DATA |       |      | NET EA*<br>1 to 24 |
|----------------|--------------|-------|------|--------------------|
|                | MA           | VOLTS | OHMS |                    |
| W102VX-9       | 140          | —     | 30   | 13.69              |
| W102VX-10      | —            | 6     | 70   | 13.69              |
| W102VX-11      | —            | 12    | 250  | 13.73              |
| W102VX-12      | —            | 24    | 1000 | 13.78              |
| W102VX-13      | —            | 48    | 4000 | 14.15              |
| W102VX-14      | 9            | —     | 7000 | 14.58              |

(Resistance  $\pm 10\%$ , measured at 25°C.)

\*Quantity discounts available on request

#### DIMENSIONS AND SCHEMATIC



#### SPECIAL ORDER DATA

Dozens of variations of stock Class 102V High Voltage Reed Relays are available on special order to meet specific design requirements. These may be ordered from the Factory or your local Magnecraft representative by specifying the catalog number of the stock unit most similar to that required and specifying the desired variation. New answers to circuit switching problems are found daily at Magnecraft . . . if you don't see the relay you need, a detailed description of your needs will receive prompt attention.

#### STANDARD COIL DATA

| AWG WIRE SIZE | OHMS | TURNS | AWG WIRE SIZE | OHMS | TURNS |
|---------------|------|-------|---------------|------|-------|
| 27            | 8    | 530   | 36            | 175  | 3900  |
| 28            | 5    | 700   | 37            | 250  | 4500  |
| 29            | 7    | 750   | 38            | 450  | 6400  |
| 30            | 10   | 1000  | 39            | 700  | 7300  |
| 31            | 19   | 1300  | 40            | 1000 | 9000  |
| 32            | 30   | 1750  | 41            | 1900 | 13300 |
| 33            | 45   | 2000  | 42            | 3000 | 16100 |
| 34            | 70   | 2450  | 43            | 4000 | 18500 |
| 35            | 100  | 3000  | 44            | 7000 | 24600 |

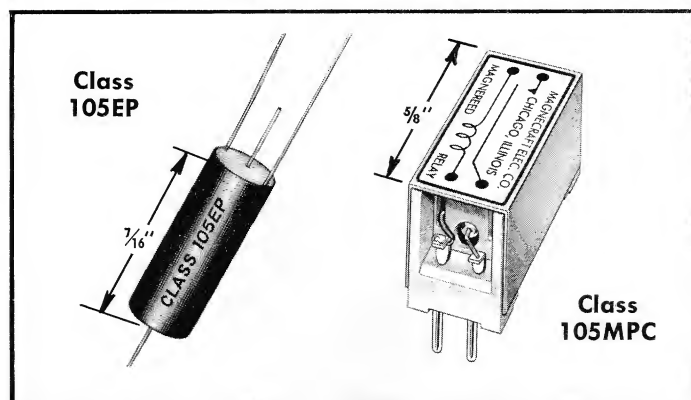
(Resistance values  $\pm 10\%$ , measured at 25°C.)

#### MAGNECRAFT ELECTRIC COMPANY

5575 North Lynch Avenue  
 Chicago, Illinois 60630  
 Phone: (312) 282-5500 TWX: (312) 265-1276

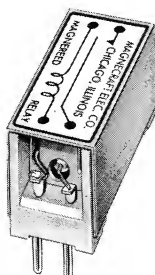
## Product Data Bulletin, Number 663

### TWO MICRO-MINIATURE DRY REED RELAY STYLES Plug-In and Axial Lead Designs for Printed Circuit Applications



Encapsulated axial lead 105EP and plug-in style 105MPC Reed Relays feature small dimensions for compact printed circuit design.

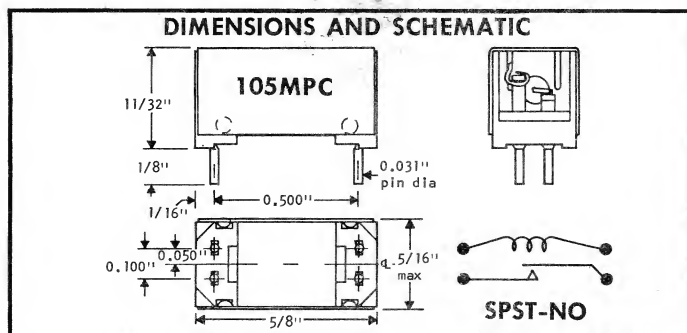
#### Low Profile "Plug-In Design of "105MPC" Ideal for Printed Circuitry!



The smallest member of the versatile family of Magnecraft Modular Packaged Reed Relays, these Class 105MPC dry reed relays are the ultimate in compactness for printed circuit applications. Height saves waste in printed circuit designs by curtailing the number of boards in a bin. With a profile only  $\frac{1}{32}$  inch high, Class 105MPC Reed Relays require no space sacrifice... they're no higher than commonly used capacitors and resistors. Specify Magnecraft Micro-Miniature Reed Relays when space is limited but reliability is needed!

#### TECHNICAL SPECIFICATIONS

Coil: SPST-NO (Form A)  
Coil Power Requirement: 300 Milliwatts  
Operating Time: 250 Microseconds, average  
Release Time: 500 Microseconds, average  
Coil Bounce: 500 Microseconds, average  
Contact Load Rating: 100 Millivolt-Amperes maximum at 10 Milliamperes maximum or 12 Volts maximum, non-inductive  
Contact Resistance: 200 Milliohms, average  
Capacitance Across Contacts: 0.35 Picofarad, average  
Life Expectancy, Rated Load: 10 million cycles  
Insulation to Ground: 250 Volts AC, RMS  
Operating Position: Any  
Ambient Temperature Range:  $-50^{\circ}\text{F.}$  ( $-45^{\circ}\text{C.}$ ) to  $+122^{\circ}\text{F.}$  ( $+50^{\circ}\text{C.}$ )

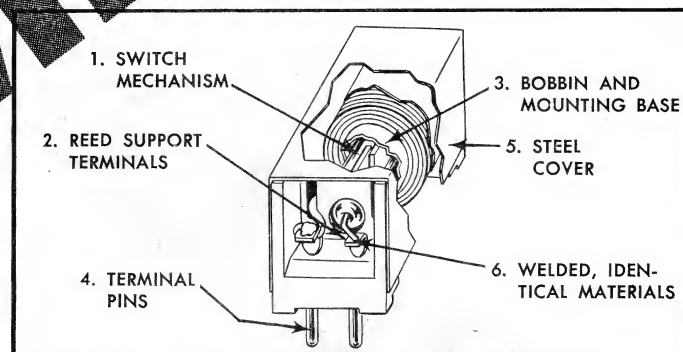


Here are the perfect answers to the electronic industry's demands for micro-miniaturized remote switching... Magnecraft's Micro-Miniature Reed Relays!

Magnecraft Micro-Miniature Reed Relays are available in either encapsulated axial lead units or "plug-in" units specifically designed for high density printed circuit applications. Both use the same switch principle and design features that provide fast switching and low internal noise... an advantage that makes these relays ideal for low voltage and "dry" circuit designs.

These two styles, the Class 105EP axial lead encapsulated unit and the Class 105MPC plug-in unit, provide all of the outstanding advantages of reed relays in low profile, compact designs that meet the most rigid demands for space saving, reliable components. Both styles are SPST-NO units available from stock for 6, 12 or 24 VDC operation. Other coil characteristics can be obtained on special order.

#### BUILT FOR MAXIMUM RELIABILITY



1. SWITCH MECHANISM. Hermetically sealed within a glass capsule filled with inert gas, contacts and reeds are completely protected from contamination and tampering.
2. REED SUPPORT TERMINALS. Rigidly anchored to the molded bobbin and welded stress-free to the switch leads. External stresses cannot be transmitted to the switch mechanism.
3. BOBBIN AND MOUNTING BASE. The integral Nylon molding provides maximum electrical insulation and mechanical protection to the relay's components.
4. TERMINAL PINS. Spaced for 0.1 inch centers for easy, rapid assembly to printed circuit boards.
5. STEEL COVER. Provides full mechanical protection and magnetic shielding to the relay.
6. WELDED IDENTICAL MATERIALS. Welding provides highest connection strength with lowest electrical resistance; identical materials minimize internal noise generation.

#### IN STOCK FOR IMMEDIATE DELIVERY

| CATALOG NUMBER | COIL DATA |      | NET EA*<br>1 to 24 |
|----------------|-----------|------|--------------------|
|                | VOLTS DC† | OHMS |                    |
| W105MPCX-1     | 6         | **   | 5.45               |
| W105MPCX-2     | 12        | **   | 5.47               |
| W105MPCX-3     | 24        | **   | 5.58               |

†Voltage operated relays pull in at 85% of nominal voltage at  $25^{\circ}\text{C.}$

\*Quantity discounts available on request.

\*\*To be announced

# Axial Lead Class "105EP" Reed Relay is Encapsulated!



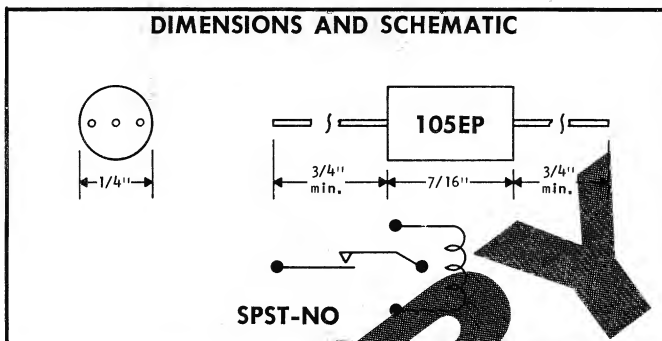
Fully encapsulated in epoxy resin, Class 105EP SPST-NO Dry Reed Relays are highly resistant to mechanical shock, excessive humidity and corrosive atmospheres. These units are ideal in circuitry that not only requires maximum resistance to adverse environmental conditions but compactness, too:

Class 105EP relays are only  $\frac{1}{4}$  inch in diameter by  $\frac{7}{16}$  inch long. Convenient, they are equipped with  $\frac{3}{4}$  inch long axial leads, for both coil and contacts, and may be used in either printed circuit applications or circuits designed for point-to-point wiring.

## SPECIFICATIONS

Contacts: SPST-NO (Form A)  
 DC Coil Power Required: 400 Milliwatts  
 Operate Time: 250 Microseconds, average  
 Release Time: 500 Microseconds, average  
 Contact Bounce: 500 Microseconds, average  
 Contact Load Rating: 100 Millivolt-Amperes maximum at 10 Milli-  
 amperes maximum or 12 Volts maximum, non-inductive  
 Contact Resistance: 200 Milliohms, average  
 Capacitance Across Contacts: 0.35 Picofarad, average  
 Life Expectancy, Rated Load: 10 million cycles

Insulation to Ground: 250 Volts AC, RMS  
 Operating Position: Any  
 Ambient Temperature Range:  $-50^{\circ}\text{F.}$  ( $-45^{\circ}\text{C.}$ ) to  $+122^{\circ}\text{F.}$  ( $+50^{\circ}\text{C.}$ )



## IN STOCK FOR IMMEDIATE DELIVERY

| CATALOG<br>NUMBER | COIL DATA |      | NET EA*<br>1 to 24 |
|-------------------|-----------|------|--------------------|
|                   | VOLTS DC  | OHMS |                    |
| W105EPX-1         | 5         | 90   | 6.18               |
| W105EPX-2         | 12        | 350  | 6.18               |
| W105EPX-3         | 24        | 1300 | 6.30               |

†Voltage values are in ohms at 85% of nominal voltage at  $25^{\circ}\text{C.}$   
 \*Quantity price available on request.

## 105MPC and 105EP Reed Relays for Specific Application Needs

Dozens of variations of stock Class 105MPC and Class 105EP SPST-NO Micro-Miniature Dry Reed Relays are available on special order to meet specific design requirements. Such variations may be ordered through your local Magnecraft Representative or directly from the factory by specifying the catalog number

of the stock relay most similar to that required and specifying the variation required. New answers to circuit switching problems are found daily at Magnecraft . . . if you don't see the relay you need, a detailed description of your requirements will receive prompt attention from Magnecraft's relay engineers.

### CLASS 105MPC STANDARD COIL DATA

| AWG<br>WIRE<br>SIZE | OHMS | TURNS | AWG<br>WIRE<br>SIZE | OHMS | TURNS |
|---------------------|------|-------|---------------------|------|-------|
| 36                  | **   | **    | 43                  | **   | **    |
| 37                  | **   | **    | 44                  | **   | **    |
| 38                  | **   | **    | 45                  | **   | **    |
| 39                  | **   | **    | 46                  | **   | **    |
| 40                  | **   | **    | 47                  | **   | **    |
| 41                  | **   | **    | 48                  | **   | **    |
|                     | **   | **    | 49                  | **   | **    |

(Resistance values  $\pm 10\%$ , measured at  $25^{\circ}\text{C.}$ )

\*\*Values to be announced

### CLASS 105EP STANDARD COIL DATA

| AWG<br>WIRE<br>SIZE | OHMS | TURNS | AWG<br>WIRE<br>SIZE | OHMS | TURNS |
|---------------------|------|-------|---------------------|------|-------|
| 36                  | 4    | 225   | 43                  | 90   | 1000  |
| 37                  | 6    | 270   | 44                  | 140  | 1300  |
| 38                  | 9    | 320   | 45                  | 225  | 1650  |
| 39                  | 14   | 400   | 46                  | 350  | 2000  |
| 40                  | 25   | 530   | 47                  | 550  | 2500  |
| 41                  | 35   | 650   | 48                  | 860  | 3100  |
| 42                  | 55   | 780   | 49                  | 1300 | 3700  |

(Resistance values  $\pm 10\%$ , measured at  $25^{\circ}\text{C.}$ )

See Your Local Magnecraft Distributor . . .

Or, Write for More Information and Our Complete  
 50-Page Catalog!

**MAGNECRAFT ELECTRIC COMPANY**

5575 North Lynch Avenue  
 Chicago, Illinois 60630

Phone: (312) 282-5500 TWX: (312) 265-1276